

WHAT IS CLAIMED IS:

1. A method for preparing a conjugate vaccine, the method comprising:
reacting a polysaccharide with an oxidizing agent, whereby a solution of an aldehyde-activated polysaccharide is obtained;
reacting a protein with hydrazine dichloride at an acidic pH, whereby a solution of a hydrazine-activated protein is obtained;
reacting the aldehyde-activated polysaccharide with the hydrazine-activated protein at a pH of from about 5 to about 7 in the presence of sodium cyanoborohydride, whereby a conjugate is obtained; and
neutralizing unreacted aldehyde groups with adipic acid dihydrazide, whereby a conjugate vaccine capable of stimulating an immune response is obtained.
2. The method according to claim 1, wherein the oxidizing agent comprises NaIO_4 .
3. The method according to claim 1, wherein the solution of the aldehyde-activated polysaccharide is buffer exchanged with a HEPES buffer.
4. The method according to claim 1, wherein the solution of the aldehyde-activated polysaccharide is buffer exchanged to a pH of from about 7 to about 8.
5. The method according to claim 1, wherein the solution of the hydrazine-activated protein is buffer exchanged with a Na_2CO_3 buffer.
6. The method according to claim 1, wherein the solution of the hydrazine-activated protein is buffer exchanged to a pH of from about 10.0 to about 11.0.
7. The method according to claim 6, wherein a pH of the solution of the hydrazine-activated protein is raised to from about 7.0 to about 11 before the solution of the hydrazine-activated protein is buffer exchanged to a pH of from about 10.0 to about 11.0.
8. The method according to claim 1, wherein the aldehyde-activated polysaccharide is reacted with the hydrazine-activated protein at a ratio of from about 1:1.6 to about 1:5.
9. The method according to claim 1, further comprising the step of diafiltrating the conjugate vaccine, whereby substantially all unreacted compounds and unconjugated polysaccharides are removed, yielding a purified conjugate vaccine.

10. The method according to claim 9, further comprising the step of concentrating the purified conjugate vaccine by tangential flow ultrafiltration, yielding a concentrated purified conjugate vaccine.

11. The method according to claim 10, further comprising the step of adding saccharose as a stabilizer to the concentrated purified conjugate vaccine, yielding a stabilized conjugate vaccine.

12. The method according to claim 10, further comprising the step of freeze drying the concentrated purified conjugate vaccine, yielding a dried conjugate vaccine.

13. The method according to claim 1, wherein the polysaccharide is selected from the group consisting of Meningococcal polysaccharides, Pneumococcus polysaccharides, *Hemophilus influenzae* type b polysaccharide, Vi polysaccharide of *Salmonella typhi*, and group B Streptococcus polysaccharides.

14. The method according to claim 1, wherein the protein is selected from the group consisting of tetanus toxoid, diphtheria toxoid, CRM₁₉₇, and meningococcal protein.